

\$%^STN;HighlightOn= ***;HighlightOff=*** ;

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 09:56:42 ON 25 OCT 2007

=> file reg

L11 ANSWER 1 OF 4 CA COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 146:295733 CA <<LOGINID::20071025>>

TITLE: N-Oxidation of pyridine carboxylic acids using
hydrogen peroxide catalyzed by a green
heteropoly acid catalyst: Preyssler's anion,
[NaP5W30O110]14-

AUTHOR(S): Bamoharram, Fatemeh F.; Heravi, Majid M.; Roshani,
Mina; Tavakoli, Niloofar

CORPORATE SOURCE: Department of Chemistry, Islamic Azad
University-Mashhad Branch, Mashhad, Iran

SOURCE: Journal of Molecular Catalysis A: Chemical (2006),
252(1-2), 219-225

CODEN: JMCCF2; ISSN: 1381-1169

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:295733

AB The catalytic oxidn. of pyridine carboxylic acids such as nicotinic acid,
picolinic acid and quinolinic acid to the corresponding N-oxides has been
studied using hydrogen peroxide as oxidant and Preyssler's catalyst as
H14 [NaP5W30O110] and H14 [NaP5W29MoO110]. The highly selective oxidns.
gave good yields of the related N-oxides along with decarboxylation of the
amines. In the prodn. of pyridine N-oxides, the position of COOH group is
found to play an important role in detg. the product type, and
decarboxylation takes place only at the 2-position to nitrogen. The
oxidn. reactions were extended to other tertiary amines.

REFERENCE COUNT: 64 THERE ARE 64 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 2 OF 4 CA COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 143:117138 CA <<LOGINID::20071025>>

TITLE: Catalyst for synthesis of 2- and 4-picolines, process
for preparing 2- and 4-picoline and process for
preparing the catalyst

INVENTOR(S): Dutta, Pashupati; Roy, Subhash Chandra; Roy, Shyam
Kishor; Goswami, Tarun Kanti

PATENT ASSIGNEE(S): Council of Scientific & Industrial Research, India

SOURCE: PCT Int. Appl., 10 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063389	A1	20050714	WO 2003-IN467	20031231
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,			

TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
CA 2552158 A1 20050714 CA 2003-2552158 20031231
AU 2003300723 A1 20050721 AU 2003-300723 20031231
EP 1708811 A1 20061011 EP 2003-819218 20031231
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
CN 1886195 A 20061227 CN 2003-80110944 20031231
IN 2004DN00489 A 20060310 IN 2004-DN489 20040227
US 2005209458 A1 20050922 US 2004-806063 20040322
PRIORITY APPLN. INFO.: WO 2003-IN467 W 20031231

OTHER SOURCE(S): CASREACT 143:117138

AB Title catalyst comprises a ***heteropoly*** acid selected from the group consisting of ***silicotungstic*** acid, ***phosphotungstic*** acid, ***phosphomolybdic*** acid and ***vanadotungstic*** acid provided on a ***support***. The ***support*** is selected from the group consisting of silica gel, alumina, silica-alumina, clays and montmorillonite. The invention also provides a process for the prepn. thereof and use thereof for the synthesis of 2- and 4-picolines useful as intermediates for pharmaceuticals and agrochemicals.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 3 OF 4 CA COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 106:86707 CA <<LOGINID::20071025>>
TITLE: Picoline manufacture by catalytic vapor-phase cyclocondensation of ethanol with ammonia
INVENTOR(S): Rajaram, Potaraju; Joshi, Milind Vishnu
PATENT ASSIGNEE(S): IEL Ltd., India
SOURCE: Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 209241	A2	19870121	EP 1986-304428	19860610
EP 209241	A3	19880120		

R: GB

IN 164212	A1	19890204	IN 1985-CA218	19850325
			GB 1985-14611	A 19850610

PRIORITY APPLN. INFO.:
AB Pyridines are prepd. from EtOH and NH3 in the vapor phase in the presence of ***heteropolyacid*** /.gamma.-alumina catalysts at 350-500.degree.. Spraying 100 g .gamma.-alumina granules with an 8.6mM MeCN soln. of H3PMo12O40 (I), drying in air for 12 h and at 110.degree. for 2 h and activating in a stream of air at 500.degree. for 2 h gave a catalyst contg. 20% I. The prepd. catalyst contained 20% 12-molybdophosphoric acid, and was packed into a tubular reactor, the temp. of which was gradually raised to 400.degree.. Passing 0.05 mL/min EtOH and 40 mL/min NH3 over this catalyst at 400.degree. gave a 40% conversion of EtOH to 2- and 4-picoline with >55 mol% selectivity.

L11 ANSWER 4 OF 4 CA COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 89:43139 CA <<LOGINID::20071025>>
TITLE: Pyridine bases
INVENTOR(S): Miyake, Tetsuya; Noguchi, Kohji; Imamura, Kazuo
PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan
SOURCE: Ger. Offen., 50 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2746177	A1	19780503	DE 1977-2746177	19771014
DE 2746177	C2	19831229		
JP 53053658	A	19780516	JP 1976-128192	19761027
JP 53053660	A	19780516	JP 1976-128194	19761027
JP 60016418	B	19850425		

JP 53053661	A	19780516	JP 1976-128195	19761027
JP 60032627	B	19850729		
US 4179576	A	19791218	US 1977-841083	19771011
GB 1579473	A	19801119	GB 1977-42496	19771012
FR 2369265	A1	19780526	FR 1977-31023	19771014
FR 2369265	B1	19800627		
CH 633777	A5	19821231	CH 1977-12608	19771014
CA 1094562	A1	19810127	CA 1977-288953	19771018
US 4263439	A	19810421	US 1979-48572	19790614
US 4239892	A	19801216	US 1979-61335	19790727
PRIORITY APPLN. INFO.:			JP 1976-128192	A 19761027
			JP 1976-128194	A 19761027
			JP 1976-128195	A 19761027
			US 1977-841083	A3 19771011

OTHER SOURCE(S): MARPAT 89:43139

AB Pyridine bases were prepd. by heating AcH with NH₃ over transition metal oxides and ***heteropoly*** oxides on Al₂O₃ or SiO₂ ***supports***. Thus, a 1-1.5 AcH-NH₃ mixt. at 430.degree. and 1000 h-1 space velocity over a catalyst prepd. by gelling Al₂(SO₄)₃ with ammonium paratungstate followed calcining gave 69.0% pyridine bases including 2- and 4-methylpyridine.

=> d ibib abs 1-3

L13 ANSWER 1 OF 3 CA COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 134:312754 CA <<LOGINID::20071025>>

TITLE: Synthesis of 3-picoline-1-oxide catalyzed by ***phosphotungstic*** acid ***supported*** on activated carbon

AUTHOR(S): Zhang, Heng

CORPORATE SOURCE: Jinxi Research Institute of Chemical Industry, Huludao, 125001, Peop. Rep. China

SOURCE: Jingxi Huagong (2000), 17(11), 676-678
CODEN: JIHUFJ; ISSN: 1003-5214

PUBLISHER: Jingxi Huagong Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB 3-Picoline-1-oxide (I) was prepd. by oxidn. of 3-picoline with H₂O₂ and the effects of various factors on the reaction were discussed. The optimal conditions, appropriate for scale-up were: the mol. ratio H₂O₂/3-picoline 1.2:1.0, reaction time 5 h, the wt. percentage of catalyst ***supported*** on active C 18%. The yield of I reached 92.0%.

L13 ANSWER 2 OF 3 CA COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 111:77817 CA <<LOGINID::20071025>>

TITLE: Catalytic oxidation systems. II. Formation of N-oxides of pyridine, alkylpyridines, and pyridinecarboxylic acids

AUTHOR(S): Cabre Castellvi, Juan; Palomo Coll, Alberto

CORPORATE SOURCE: Dep. Invest., Gema S. A., Barcelona, 08021, Spain

SOURCE: Afinidad (1988), 45(418), 511-15
CODEN: AFINAE; ISSN: 0001-9704

DOCUMENT TYPE: Journal

LANGUAGE: Spanish

AB N-Oxidn. of the title pyridines was examd. using systems comprising H₂O₂ as oxidant and ***phosphotungstic***, ***phosphomolybdic***, and ***silicotungstic*** acids as catalysis. ***Phosphotungstic*** acid is an efficient catalyst at room temp.

L13 ANSWER 3 OF 3 CA COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 100:51464 CA <<LOGINID::20071025>>

TITLE: N-Oxides of pyridine and quinoline derivatives

INVENTOR(S): Nagy, Ferenc; Losonczi, Bela; Lengyel, Meszaros Agnes; Kovacs, Istvan; Havasi, Gabor; Felmeri, Jozsef; Rusznak, Istvan; Kormondi, Istvan

PATENT ASSIGNEE(S): Richter Gedeon Vegyeszeti Gyar Rt., Hung.

SOURCE: Hung. Teljes, 14 pp.

CODEN: HUXXB

DOCUMENT TYPE: Patent

LANGUAGE: Hungarian

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
HU 25878	A2	19830829	HU 1981-2813	19810930
HU 183595	B	19840528		
PRIORITY APPLN. INFO.:			HU 1981-2813	19810930
GI				

/ Structure 3 in file .gra /

AB Pyridine and quinoline N-oxides (I and II, resp.) (R1 and R2 = H, C1-4 alkyl, halo, CO2H, CN, or CONH2) are prepd. from the corresponding parent compds. by oxidn. with H2O2 in the presence of ***phosphomolybdic*** or ***phosphotungstic*** acid catalysts. Thus, 10 g pyridine and 0.5 g ***phosphotungstic*** acid in 5 mL water was treated with 17.1 g 30% H2O2, at 80.degree., followed by heating to 90.degree. for 1 h to give 15 g pyridine N-oxide-HCl.

=> d his

(FILE 'HOME' ENTERED AT 09:56:42 ON 25 OCT 2007)

FILE 'REGISTRY' ENTERED AT 09:56:57 ON 25 OCT 2007

L1 0 S SILOCOTUNG?

FILE 'CA' ENTERED AT 09:57:14 ON 25 OCT 2007

L2 23175 S PICOLIN?

L3 0 S L2/PREP

FILE 'REGISTRY' ENTERED AT 09:57:35 ON 25 OCT 2007

L4 6110 S PICOLINE

FILE 'CA' ENTERED AT 09:57:54 ON 25 OCT 2007

L5 34319 S L4

L6 6636 S L4/PREP

L7 34175 S SILICOTUN? OR PHOSPHOT? OR PHOSPHOMOL? OR VANADOTUN?

L8 762195 S SUPPORT?

L9 794542 S L7 OR L8

L10 181 S L9 AND L6

L11 4 S L10 AND HETEROPOLY?

FILE 'STNGUIDE' ENTERED AT 10:00:11 ON 25 OCT 2007

FILE 'CA' ENTERED AT 10:02:16 ON 25 OCT 2007

L12 6 S L7 AND L10

L13 3 S L12 NOT L11

FILE 'STNGUIDE' ENTERED AT 10:03:27 ON 25 OCT 2007

=>

=>

Executing the logoff script...

SESSION WILL BE HELD FOR 120 MINUTES

STN INTERNATIONAL SESSION SUSPENDED AT 10:04:37 ON 25 OCT 2007

10/806063

ACCESSION NUMBER: 143:117138 CA
TITLE: Catalyst for synthesis of 2- and 4-picolines, process
for preparing 2- and 4-picoline and process for
preparing the catalyst
INVENTOR(S): Dutta, Pashupati; Roy, Subhash Chandra; Roy, Shyam
Kishor; Goswami, Tarun Kanti
PATENT ASSIGNEE(S): Council of Scientific & Industrial Research, India
SOURCE: PCT Int. Appl., 10 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063389	A1	20050714	WO 2003-IN467	20031231
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2552158	A1	20050714	CA 2003-2552158	20031231
AU 2003300723	A1	20050721	AU 2003-300723	20031231
EP 1708811	A1	20061011	EP 2003-819218	20031231
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
CN 1886195	A	20061227	CN 2003-80110944	20031231
IN 2004DN00489	A	20060310	IN 2004-DN489	20040227
US 2005209458	A1	20050922	US 2004-806063	20040322
PRIORITY APPLN. INFO.:			WO 2003-IN467	W 20031231

OTHER SOURCE(S): CASREACT 143:117138

AB Title catalyst comprises a heteropoly acid selected from the group consisting of silicotungstic acid, phosphotungstic acid, phosphomolybdic acid and vanadotungstic acid provided on a support. The support is selected from the group consisting of silica gel, alumina, silica-alumina, clays and montmorillonite. The invention also provides a process for the preparation thereof and use thereof for the synthesis of 2- and 4-picolines useful as intermediates for pharmaceuticals and agrochemicals.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

10/806063

ACCESSION NUMBER: 106:86707 CA
TITLE: Picoline manufacture by catalytic vapor-phase
cyclocondensation of ethanol with ammonia
INVENTOR(S): Rajaram, Potaraju; Joshi, Milind Vishnu
PATENT ASSIGNEE(S): IEL Ltd., India
SOURCE: Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	----	-----	-----
EP 209241	A2	19870121	EP 1986-304428	19860610
EP 209241	A3	19880120		
R: GB				
IN 164212	A1	19890204	IN 1985-CA218	19850325
PRIORITY APPLN. INFO.:			GB 1985-14611	A 19850610

AB Pyridines are prepared from EtOH and NH₃ in the vapor phase in the presence of heteropolyacid/ γ -alumina catalysts at 350-500°. Spraying 100 g γ -alumina granules with an 8.6mM MeCN solution of H₃PMo₁₂O₄₀ (I), drying in air for 12 h and at 110° for 2 h and activating in a stream of air at 500° for 2 h gave a catalyst containing 20% I. The prepared catalyst contained 20% 12-molybdophosphoric acid, and was packed into a tubular reactor, the temperature of which was gradually raised to 400°. Passing 0.05 mL/min EtOH and 40 mL/min NH₃ over this catalyst at 400° gave a 40% conversion of EtOH to 2- and 4-picoline with >55 mol% selectivity.

10/806063

ACCESSION NUMBER: 89:43139 CA
TITLE: Pyridine bases
INVENTOR(S): Miyake, Tetsuya; Noguchi, Kohji; Imamura, Kazuo
PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan
SOURCE: Ger. Offen., 50 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2746177	A1	19780503	DE 1977-2746177	19771014
DE 2746177	C2	19831229		
JP 53053658	A	19780516	JP 1976-128192	19761027
JP 53053660	A	19780516	JP 1976-128194	19761027
JP 60016418	B	19850425		
JP 53053661	A	19780516	JP 1976-128195	19761027
JP 60032627	B	19850729		
US 4179576	A	19791218	US 1977-841083	19771011
GB 1579473	A	19801119	GB 1977-42496	19771012
FR 2369265	A1	19780526	FR 1977-31023	19771014
FR 2369265	B1	19800627		
CH 633777	A5	19821231	CH 1977-12608	19771014
CA 1094562	A1	19810127	CA 1977-288953	19771018
US 4263439	A	19810421	US 1979-48572	19790614
US 4239892	A	19801216	US 1979-61335	19790727
PRIORITY APPLN. INFO.:			JP 1976-128192	A 19761027
			JP 1976-128194	A 19761027
			JP 1976-128195	A 19761027
			US 1977-841083	A3 19771011

OTHER SOURCE(S): MARPAT 89:43139

AB Pyridine bases were prepared by heating AcH with NH₃ over transition metal oxides and heteropoly oxides on Al₂O₃ or SiO₂ supports . Thus, a 1-1.5 AcH-NH₃ mixture at 430° and 1000 h-l space velocity over a catalyst prepared by gelling Al₂(SO₄)₃ with ammonium paratungstate followed calcining gave 69.0% pyridine bases including 2- and 4-methylpyridine.

10/806063

ACCESSION NUMBER: 134:312754 CA
TITLE: Synthesis of 3-picoline-1-oxide catalyzed by
phosphotungstic acid supported on
activated carbon
AUTHOR(S): Zhang, Heng
CORPORATE SOURCE: Jinxi Research Institute of Chemical Industry,
Huludao, 125001, Peop. Rep. China
SOURCE: Jingxi Huagong (2000), 17(11), 676-678
CODEN: JIHUFJ; ISSN: 1003-5214
PUBLISHER: Jingxi Huagong Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB 3-Picoline-1-oxide (I) was prepared by oxidation of 3-picoline with H₂O₂ and
the effects of various factors on the reaction were discussed. The
optimal conditions, appropriate for scale-up were: the mol. ratio
H₂O₂/3-picoline 1.2:1.0, reaction time 5 h, the weight percentage of catalyst
supported on active C 18%. The yield of I reached 92.0%.

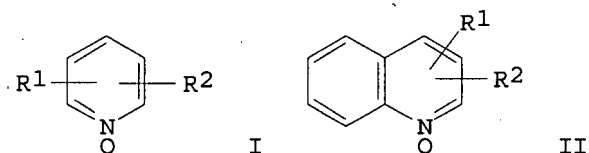
10/806063

ACCESSION NUMBER: 111:77817 CA
TITLE: Catalytic oxidation systems. II. Formation of N-oxides
of pyridine, alkylpyridines, and pyridinecarboxylic
acids
AUTHOR(S): Cabre Castellvi, Juan; Palomo Coll, Alberto.
CORPORATE SOURCE: Dep. Invest., Gema S. A., Barcelona, 08021, Spain
SOURCE: Afinidad (1988), 45(418), 511-15
CODEN: AFINAE; ISSN: 0001-9704
DOCUMENT TYPE: Journal
LANGUAGE: Spanish
AB N-Oxidation of the title pyridines was examined using systems comprising H2O2
as oxidant and phosphotungstic, phosphomolybdic, and
silicotungstic acids as catalysis. Phosphotungstic acid
is an efficient catalyst at room temperature

10/806063

ACCESSION NUMBER: 100:51464 CA
TITLE: N-Oxides of pyridine and quinoline derivatives
INVENTOR(S): Nagy, Ferenc; Losonczi, Bela; Lengyel, Meszaros Agnes;
Kovacs, Istvan; Havasi, Gabor; Felmeri, Jozsef;
Rusznak, Istvan; Kormondi, Istvan
PATENT ASSIGNEE(S): Richter Gedeon Vegyeszeti Gyar Rt., Hung.
SOURCE: Hung. Teljes, 14 pp.
CODEN: HUXXBU
DOCUMENT TYPE: Patent
LANGUAGE: Hungarian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
HU 25878	A2	19830829	HU 1981-2813	19810930
HU 183595	B	19840528		
PRIORITY APPLN. INFO.: GI			HU 1981-2813	19810930



AB Pyridine and quinoline N-oxides (I and II, resp.) (R1 and R2 = H, Cl-4 alkyl, halo, CO₂H, CN, or CONH₂) are prepared from the corresponding parent compds. by oxidation with H₂O₂ in the presence of phosphomolybdic or phosphotungstic acid catalysts. Thus, 10 g pyridine and 0.5 g phosphotungstic acid in 5 mL water was treated with 17.1 g 30% H₂O₂, at 80°, followed by heating to 90° for 1 h to give 15 g pyridine N-oxide-HCl.